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SOUTHDOWN BRANCH.—
Brighton Centre.—Hon. Sec.: Mrs. William Borrer, Pakyns Manor, Hurstpierpoint.
Eastbourne Centre.—Hon. Sec.: Mrs. G. F. Butt, Ingleside, Selwyn Road. It is difficult to speak in adequate terms of the impression made by the lecture given by Miss Webb, M.B., on the 10th May, at the house of the Hon. Sec., entitled, "A plea for the Teaching of Botany: a lecture to Mothers." One result of that meeting is, that small classes are being arranged for the study of Elementary (Physiological) Botany (free) to members of the branch; and the Hon. Sec. will be glad to receive the names of any who are interested in the subject. The next lecture, by Dr. E. Downes, on "Some radical defects of Modern Education," will be held at the Caldecott Museum, at 5 p.m., on Tuesday, 11th June.
Hastings and St. Leonard's Centre.—Hon. Sec.: Mrs. Edward Venables, S. Bernard's Lodge, London Road, S. Leonards. On Thursday, March 21st, at 33, Marina, by the kind permission of Mr. and Mrs. A. C. Routh, a meeting was held. and an address given by the Rev. H. B. Ottley, Vicar of Eastbourne, on "The Religious Training of Children." Chairman, Rev, F. A. Hughes. On May 27th, Dr. Oakley Higgens was announced to lecture on "The Formation of Habit in Children." Chairman, the Rev. Canon Jones.

LEEDS BRANCH.—*Hon. Sec.:* Mrs. Arthur Smithells, 4, St. Chad's Gardens, Far Headingly.

SOUTHPORT BRANCH.—*Hon. Sec.:* Mrs. James Dixon, 8, Preston Road

CARDIFF BRANCH.—*Hon. Sec.:* Mrs. Greener, 1, Clare Street, Riverside.

SCARBOROUGH BRANCH.—*Hon. Sec.:* Mrs. G. Rowntree, 14, Valley Bridge, Scarborough.

SHEFFIELD BRANCH.—*Hon. Sec.:* Mrs. Newton Coombe, Brocco Bank, and Miss Walmsley, the High School.

FOLKESTONE BRANCH.—*Hon. Sec:* Mrs. Baynes, 9, Christchurch Road. *Treasurer:* Mrs. Copland-Griffith.

BROUGHTY FERRY BRANCH.—*Hon. Sec.:* Mrs. Don, The Lodge, Broughty Ferry, N.B.

DUNFERMLINE BRANCH.—*Hon. Sec.:* (pro tem): Henry Beveridge, Esq., Pitreavie, Dunfermline, N.B.

EDINBURGH BRANCH.—*Hon. Sec.:* Miss Berry Hart, 29, Charlotte Square.

ABERDEEN BRANCH.—*Hon. Sec.:* Mrs. Cary, 434, Union Street. Mrs. Lawson, having removed to Newport, Fife, has been compelled to resign the Hon. Secretaryship of this branch.

THE
PARENTS' REVIEW
A MONTHLY MAGAZINE
OF HOME-TRAINING AND CULTURE.

"Education is an atmosphere, a discipline, a life."

THE MIGRATION OF BIRDS.

BY R. G. WARDLAW RAMSAY, F.Z.S., M.B O.U.

THE fact that a considerable number of our British birds are only resident in this country at certain seasons is well known to all, even to the least observant, and there are few, at any rate, of those who live in the country who do not watch with interest the first arrival of such favourite birds as the cuckoo, the corncrake and the swallow.

There are many facts, however, which attend this interesting subject of the arrival and departure of our migrants, and their journeys to and from their summer or winter quarters, of which, no doubt, many of our readers are not aware.

In Great Britain we have about 400 different kinds of birds, not all at the same time, as will be understood when it is stated that our regular British birds may be roughly divided into :—

Resident and partial migrants -	132
Regular migrants (summer) -	52
Ditto (winter) - - -	37
Total	221

Partial migrants are such birds as some of the wagtails, the song thrush, redbreast and chaffinch, many of which annually leave our shores, though many remain throughout the winter.

It is an interesting fact that it is in these cases nearly always the young birds that leave us: they are driven away by the old ones, who are probably actuated by an instinct of self-preservation in order to prevent over-population and consequent scarcity of food. Among birds of prey this habit is well known. Moreover, we find our most sedentary birds moving about from one place to another in search of food. Indeed, in hard weather, such as was experienced last winter, birds went anywhere that food could be found, regardless of their usual habits.

Of the regular migrants we have (1) those who come to us in spring, like the cuckoo, the swallow and the warblers, and leave us in autumn after breeding. We know that these mostly winter in Africa, though a few may remain in Southern Europe. (2) Those like the fieldfare, redwing, many ducks, and other wild fowl and shore birds, which have their breeding grounds nearer to the North Pole, and which come to us in winter, when the weather gets severe.

The phenomenon of periodical movement of birds, which we call migration, is of most consuming interest, and presents for solution many questions, some of which only can be fairly said to be answered, the others remaining still to be solved, although theories without number have been advanced, which are more or less likely to be true.

It is not so many years since people thought, and, I believe, some still think, that our summer birds crept into holes, and spent the winter in a state of torpor—swallows, for instance, at the bottom of ponds. But while it does not do to say that such things do not happen, seeing that we have apparently incontestable evidence that they *do*, and, moreover, when we know that in certain animals hibernation or winter torpidity is the rule, there is nothing impossible about it. But for all that it is exceptional, to say the most of it, in birds, and we know now pretty well what the range of every British bird is when it leaves our shores. There are a few who spend the summer in this country, like the turtle-dove and the house and sand martin—both the latter familiar birds to you—of whose winter quarters we are still ignorant, but we know that they must be somewhere in Africa. There will soon be very little of Africa unexplored by naturalists. The Western Soudan seems to remain for the

last, and in that vast area will probably be found the winter home of these birds.

Now you will observe that if our resident birds like the robin, the wren, the song thrush, the dipper, the crows, and greenfinch only number 132, and some of these *do* migrate to some extent, it leaves 244 which are only visitors; but of these 89 are very regular, and remain, some of them, for many months. The remaining 155 are made up of 23 occasional visitors from America, 23 stragglers from the North of Europe, and 109 casual visitors, chiefly from the South of Europe, of such are the hoopoe, the golden oriole, and the bee-eater.

Now that birds not belonging properly to our fauna should visit us occasionally, like the oriole, the hoopoe, the roller, the waxwing, the great grey shrike, is not remarkable, seeing how short the distance across the North Sea or English Channel is, but that we should get visitors from the other side of the Atlantic, many thousands of miles away, seems more wonderful. That these are birds that have been blown out of their course by storms there can be little doubt. We know that a large proportion of these American visitors belong to the ducks, plovers, sandpipers and gulls, which go very far north of America to breed; these, in their journey south, might easily be diverted by storms from their straight course, and falling into another stream of migrating birds of other species, would pass down the coast of Norway and thence to the East Coast of Britain. If these birds flew across the Atlantic you would expect to find them generally on our western coasts or in Ireland, which is not the case, for, as a matter of fact, nearly all our American visitors are obtained on our east coast, and that in the autumn months, during the time of the general southward migrations.

But remarkable as these casual visits are, they are nothing compared to the wonderful and mysterious phenomenon of the periodical and regular arrival and departure of birds to and from this country.

Of these 37 are birds like the fieldfare and the redwing, snow bunting and many water-birds, which have their breeding grounds nearer the Pole, some going further north than any Arctic expedition has yet reached, but returning south when the weather gets hard to winter in the warmer climes, among other places, in the British Isles. But many of these stay but a very short time with us before passing on to winter much farther south. The remaining 52 are mostly birds that breed in this country, such as the swallows, the cuckoo, the warblers, most of the wagtails, which arrive in the spring and retire to the south in the autumn, to winter for the most part in Africa, some of them, like the swallow and the cuckoo, going as far south as the Cape of Good Hope.

Now, although the movements of birds differ both in time and direction, they are probably all actuated by a similar impulse. We shall not be far wrong, I think, if we assume that food is the chief object for which birds migrate. For instance, suppose a tiny warbler living entirely on insects, it would have abundance and to spare in the short, but hot summer of the Northern regions, when insects abound to an extent of which we have no idea in this country, but as soon as the weather got cold and the supply of insects failed the same bird would starve. It is wonderful enough how some birds exist at all far up within the Arctic circle. Captain Fielden, naturalist to the Arctic Expedition of the *Alert* and *Discovery* of 1875-6, observed between latitudes 78 and 83, 24 different kinds of birds breeding. Two birds of prey, a falcon and an owl and a raven, which live on carrion, could be easily supplied with food, but he found the rock ptarmigan and five wading birds, whose chief means of subsistence were small crustaceans and the buds of a saxifrage (*S. oppositifolia*); the remainder were water birds. As of the warblers, so the same might be said of the ducks and other birds, who feed in the water or mud; life would be impossible after the winter frost had set in, and so they come south. This is comparatively easy to understand, but it is not so easy to account for birds like the cuckoo and the swallow, which winter in Africa, leaving a country which we might think would be so much better supplied with their needful food than ours is. This, however, is not really the case, for huge tracts in Africa are so parched in summer that streams and lakes are quite dried up, and fishes and reptiles bury themselves in the mud, and insects are nearly as scarce as they are in the winter in northern latitudes.

There can be no doubt that birds have within them an impulse, call it instinct or what you like, which urges them

to move their quarters at certain seasons. Even some of our most familiar birds, who, from their being constantly with us are not suspected of being migrants, really are so. Now these are facts well-known to every student of natural history, but how to account for them is not so easy.

The study of this phenomenon suggests many questions and many attempts have been made to explain them by many authors, such as the German naturalist Weismann, and many naturalists in this country, including Mr. Charles Dixon, to whose writings I am indebted for much information, and which I have freely used in the preparation of this article. (1) Why do birds migrate, and whence comes the impulse to migrate? (2) How do they know that the conditions will be more favourable at the Cape of Good Hope, 8,000 miles away, especially in the case of young birds who have never been there before? (3) How do they migrate, and how do they find their way?

(1) Why do they migrate? There is an impulse to do so which is probably hereditary. Want of food is, no doubt, the prime cause of the impulse, although, no doubt, the bird is quite unconscious of it. To account for the origin of this impulse in certain birds to move their quarters at more or less regularly fixed dates, many theories have been propounded, some of which are more or less made probable by certain ascertained facts, but as yet we are far from being in a position to dogmatise.

(2) How do they know that conditions will be better elsewhere? They do not know it; they move when impelled to do so when the time comes, and that very often regardless of consequences. It is well known that swallows will sometimes forsake late broods in autumn if the time for migration has come.

(3) How do birds migrate, and how do they find their way? Let us suppose it is the month of September. The young birds go first; strange as this may seem, it completely disposes of the belief that the old birds show them the way. It is nevertheless true that they sometimes are accompanied by some old birds, most likely those who have lost their mates or their broods, or perhaps have not nested, but as a rule these even precede the young birds. There are various reasons for this order; one is that the young are in the

perfection of their first plumage, while the old birds have to accomplish their autumnal moult before they are able to travel. An exception to this rule is the swallow, which does not moult until it reaches its winter quarters in Africa. The young in many cases migrate almost as soon as they can fly properly, because birds that we know must have flown at least 2,000 miles from their breeding grounds, are often found on our shores with remains of nestling down still on them. After a week or two perhaps, they are followed by the males and lastly the females, together with any birds which may have been unable to travel sooner, owing to injuries or other reasons.

It has been observed, however, that in the return journey in spring the old males arrive first, but this may probably be accounted for by the fact that they are stronger and have, therefore, outstrip the females, for it is known that the northward migration is performed at a much greater speed than the southward.

The wonderful punctuality with which birds arrive and depart year after year, and even return to the same spot, has been a constant source of wonder to observers of nature. For many years records have been kept by a host of observers of the date of arrival and departure of our summer visitors, and it is marvellous how little they vary, seldom more than a few days, and this variation is generally to be accounted for by storms or adverse winds, which have delayed the little travellers. Just one word about wind, which, of course, is a most important influence upon the migration of birds. It might be thought that a wind right aft would suit them best and help them along, but this is not so. Birds always prefer what sailors call a beam wind, or a wind about two or more points in front of the beam, the reason, of course, being that this keeps the plumage smooth, and, consequently, makes flight easier, and also allows them to use their tails as rudders; whereas a fair wind behind would ruffle the plumage and also make steering impossible. Some birds like the puffin will leave our shores for the south to the very day with the most absolute regularity and that no matter what the weather may be like.

When I was in Burmah about twenty years ago, I was much struck with the same fact in the migration of the adjutant or marabout stork, as he is called. The first year huge armies were passing over our station going southward on November 8th, the noise of their wings and throats being heard for an immense distance. Next year I kept a sharp look-out for them, and to the very day, November 8th, the first host of adjutants passed over.

Migrating birds travel in different manners, and that even among birds of the same species. Sometimes they travel slowly and by short stages, stopping for food and rest sometimes for days. Others travel very rapidly, probably those who have the farthest to go, like the swallow. The normal speed at which birds fly has, I think, been much exaggerated. It is not possible to be certain on such a point, but it is the impression of competent authorities that few birds fly more than forty miles an hour. Mr. Tegetmeier tells us that the average speed of trained homing pigeons is well under that, and we know how fast they appear to fly.

Some species travel singly, or in small parties, like skylarks. Others congregate in vast flocks before starting, as you know the swallows and martins do.

Some travel mostly by day, and rest at night, while others, and perhaps the majority, seem to do all their flight at night. Others, again, do both, or go by day and return at night. Some fly quite low, close to the ground or water; others fly at a great height, one or two miles, especially the wading and swimming birds, and make enormous journeys without stopping. One of the principal reasons for great altitude is, no doubt, that the birds can see much further, especially during the day, but other reasons have been suggested. Mr. Charles Dixon, a careful observer of birds at their times of migration, suggests that at great heights the labour is easier, owing to the rarefaction of the air: also that the birds are freer from their enemies, the birds of prey, who make such havoc among birds which migrate at low altitudes. But although even small birds are known to fly sometimes at great heights, such as two miles, the majority do not. One observer fixed a telescope on the moon, and counted the number of birds crossing its disc. In three hours he counted 262, and of these 233 were computed to be at a height of from 1,500 to 15,000 feet, and many of *them* were still flying upwards.

The distance which migrating birds travel, from start to finish, is very variable. It has been observed that many of the birds which go farthest North in summer, are those that go farthest South in winter.

Mr. Charles Dixon has tabulated the extreme flights of some of our migrants from summer to winter quarters—

Pied Wagtail and Woodcock -	2,000 miles.
Lapwing, Jacksnipe, Wild Duck	3,000 to 5,000 ,,
Wheatear, Cuckoo, Corncrake	6,000 ,, 7,000 ,,
Swallow, Willow Wren, and many wading birds -	7,000 ,, 10,000 ,,

Is it not truly wonderful that a delicate and fragile little bird like a willow wren should be capable of such prolonged flights twice in a year?

Different kinds of birds have fairly well defined routes, to which they are more or less constant as conditions of weather permit, but they are known in some cases to come by a different route than that by which they go. One route, for instance, is down the West coast of Norway, the East coast of Britain, the west coast of France and Spain, and over the Straits of Gibraltar into Africa.

The passage of migrating birds is often made known, especially to those who have to be much out at night, by their call notes. When the night is clear, and they are travelling at a vast height, as many night travellers do, they are not often heard, but on a cloudy or misty night they are more noisy, probably to keep themselves together, and it is in such weather that they fly helplessly against the lighthouses on our coasts in great numbers, and are killed or caught.

Much interesting information—indeed, nearly all we know regarding migration, has been obtained by the investigation of two gentlemen, Mr. J. A. Harvie Brown and Mr. J. Cordeaux, who have been ably assisted by the keepers of our lighthouses.

Sea birds rarely strike the lights, it is nearly always land birds. Sometimes birds are observed passing over or flying round the lights in incredible numbers. At other times large birds fly against the glass, ¼ to ½ inch thick, with such force as to break them, ducks especially: just think of the speed

they must be going! In the island of Heligoland, not long since ceded to Germany in exchange for Zanzibar, has long lived a gentleman, by name Herr Gätke, who has studied with exceptional advantage the migration of birds and has recently written a book about it. One instance he gives will give you some idea of the numbers of birds in a migrating party.—"From ten o'clock on the night of the 28th October, 1882, to the next morning, goldcrests eddied thick as flakes of snow round the lighthouse, on the morrow literally swarming on every square foot of the island; and twelve months later larks in myriads thronged to its bright beams for four nights in succession, accompanied by starlings in hardly fewer numbers."

Some of the reports of the lighthouse keepers are almost incredible . . . . . birds striking the lights and falling into the sea in countless thousands, or passing over day after day in perfect myriads, the air sometimes seeming alive with birds. When you realise that in their ordinary haunts most of these birds are not to be found in any such numbers, and one I have mentioned, the goldcrest, is only about three inches long, one marvels at the system, quite unconscious probably, which is required to drain off the birds from their summer quarters into these huge and orderly streams of migrating birds.

Now, how do all these vast numbers of travellers find their way?

Well, first, comparatively few *do* reach their destination; the mortality in migration must be enormous. We wonder how a frail little bird like a goldcrest can fly across several hundreds of miles of sea, but if the truth were known it is probably only the strongest that *do*, the greater number perish in the sea. All travellers by sea have seen birds alighting on the rigging of ships to rest, many of them in the last stage of exhaustion and allowing themselves to be caught by hand. It is obvious that but for the friendly ship these little travellers would have fallen into the sea and been drowned. The dangers of other kinds, too, attending birds on migration are many. Birds of prey make tremendous havoc among them, indeed, it is well known that some kinds of hawks and owls habitually migrate with them for the sake of the constant and easily obtained food. The merlin certainly does, and the peregrine falcon follows the migrating ducks. The short-eared owl is probably another instance. Then, again, enormous numbers are blown out of their course by adverse winds and lose their way and are drowned, or get into the wrong stream of birds and so find themselves thousands of miles away from where they ought to be; it is this fact which accounts for the numbers of strange birds which occur every year in our islands, some, like the yellow-billed cuckoo and the American bittern, which, not being northern breeders, must have crossed the Atlantic. Small birds have been known to come on board ships over 1,000 miles out in the Atlantic. We do not possess enough evidence as to how birds find their way, but we may take it that the impulse to migrate, and that along a usually fixed route, is inherited. We do not know how this impulse originated, but many theories have been advanced to account for it.

That in some cases sight has much to do with it, specially by day, there can be little doubt. Birds often fly at a great height, and, as can be testified by people who have been up in a balloon, must see enormous distances.

The sense of direction, too, is probably much developed in birds. This is rarely so in civilized races of men, as they have no occasion for using it, but it is present in a remarkable degree in races like the North American Indians. Some naturalists have thought to account for the development of this faculty in birds by the theory that those birds which do not possess it would probably perish in migration, and those only which had it would be left to breed, races of birds so endowed being the result.

This, of course, however ingenious and interesting, is only speculation at best.

May the hope be expressed, in conclusion, that our readers will investigate further this very interesting subject, and that these few notes may be of use to them.

They will find the work published by Mr. Charles Dixon on the Migration of Birds, to whom I have already acknowledged my indebtedness, a most interesting book.

THE INTEREST OF LIFE IN CHILDHOOD AND YOUTH.

BY THE REV. C. A. WHITTUCK,

Rector of Great Shefford.

I. THE EXTERNAL WORLD.

Double-sided Activity of Childhood.—The life of childhood pursues two parallel lines of development which, though repeatedly converging and blending together, are yet essentially distinct. The child is occupied on the one hand in adjusting itself to its surroundings. Its early experiences are of the nature of an apprenticeship—a process of discipline and habituation. The requirements involved in this process have reference to specific points of detail, and presuppose the technical engagement of the mind rather than its education more generally.

On the other hand, together with the discharge of these special functions and the performance of these particular duties, there is engendered in the child's mind an activity of a wholly different kind. We have no word in English to express this activity, for our English word "imagination" does not, like the German *Einbildung*, suggest any idea of the selective and combinative power of the mind which, in these respects, may perhaps be best understood by comparing it with the nest-building activity of birds. No one, however, can doubt that the child is building up a world of its own at the same time that it is fashioning itself to meet the exigencies of its environment.

Now, though these two lines of development are always meeting and crossing each other so that we cannot say where the one ends and the other begins, there can be no difficulty in seeing, not only that they are in their origin incapable of being derived the one from the other, but also that they retain this distinctness throughout their whole subsequent course.